

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and the remarks that follow.

Status of the Claims

Claims 58-77 are currently pending with claims 58-67, 73, 75 and 76 being withdrawn from consideration. In this amendment Applicant cancels claims 58-67, 73 and 75-76 without prejudice. Claims 68 and 74 are amended. In particular, claim 68 is amended to recite a method for treating psoriasis and to further recite the use of UV light having an emission peak at or between 312 and 311 nm and a full width half maximum of about 0.1 to 2 nm for psoriasis treatment. Support for this amendment is found throughout the specification and particularly on page 38, lines 5-6 of the application as filed. Support for the phrase “has a bell curve characterized by” in claim 74 is found on page 16, lines 15-18 of the as filed specification. Thus, no new matter is added.

After entry of the claim amendments, claims 68-72, 74 and 77 are pending and are presented for reconsideration.

Rejections Under 35 U.S.C. 112, second paragraph

Claim 69 is rejected as being indefinite. Applicant’s amendments to claim 68 provide the requisite antecedent basis for the objected term in claim 69. Thus, the indefiniteness rejection of claim 69 is considered to be moot. Reconsideration of this rejection, therefore, is respectfully requested.

Rejections Under 35 U.S.C. 102(b)

Claims 68, 71, 72, 74 and 77 are rejected as being anticipated by U.S. Publication 2002/0183811 (“Irwin”). Regarding claims 68 and 74, it is the Office’s contention that Irwin discloses an apparatus and methods for using the same in the treatment of psoriasis using UV light of wavelengths in the range of between 295 nm and 320 nm. See page 3 of the Office Action. Thus, in the Office’s opinion Irwin anticipates the claimed invention. Applicant respectfully disagrees.

The claimed invention is directed to a method for treating psoriasis using UV light having an emission peak at or between 312 and 311 nm and a full width half maximum of about 0.1 to 2 nm. As described on page 38, lines 11-16 of the application as filed, LED and nanostructure UV light emitting devices designed to deliver a narrow bandwidth of light, such as light peaking between 312 and 311 nm and a full width half maximum of about 0.1 to 2 nm represent an improvement over prior art psoriasis therapy because the LED and nanostructure UV light emitting devices allow for precise control over the bandwidth of emitted photons by emitting UV radiation with a range of peaks between 311 and 312 nm which are preferred wavelengths for psoriasis treatment. Thus, the psoriasis patient is not exposed to harmful UV radiation outside the narrow band centered around 311-312 nm. In contrast, prior art UV lamps emit a broad UV radiation band which includes potentially harmful UV wavelengths.

Although Irwin teaches the use of a light emitting diode (LED) as the source of UV light, LED's are mentioned as one possible source of UV light along with other UV sources such as a lamp or laser. See para 41 of Irwin.

However, Irwin does not teach psoriasis treatment using UV light having a narrow bandwidth such as a full width half maximum of about 0.1 to 2 nm as claimed. To the contrary, Irwin discloses and exemplifies psoriasis treatment employing a broad bandwidth of UV light, for example, treatment of psoriasis using light that includes wavelengths between 300 and 315 nm at high dose exposures. See para 60 of Irwin. In fact, Irwin teaches away from using a single intense spectral line, such as light at 312 nm. *Id.* at para 60. Irwin states that:

“Limiting treatment to only a single narrow line such as the 312 nanometer line is not preferred as the phototherapy response to this line is nearly twenty times less than the response for light having a wavelength of 302 nanometers. Advantageously, a spectral band of between about 302 to 315 nanometers exploits the higher phototherapy response of the shorter wavelengths such as between about 302 and 305 nanometers as well as the higher spectral emittance obtained for wavelengths ranging between about 305 and 315 nanometers.”

(Irwin at paragraph 60; emphasis added.)

These teachings of Irwin are in stark contrast to the inventive method for treating psoriasis that requires the UV light to have a narrow width emission peak at or between 312 and 311 nm and a full width half maximum of about 0.1 to 2 nm. Irwin, therefore, does not anticipate the claimed invention. Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

Rejections Under 35 U.S.C. 103(a)

Claim 70 is rejected under 35 U.S.C. 103(a) as being unpatentable over Irwin. The Office states that it would have been obvious for a person of ordinary skill to use a nanostructure light source as the light emitting device. Applicant respectfully disagrees.

The Office acknowledges that Irwin does not teach a nanostructure as the light emitting device. However, the Office did not place any patentable weight for a nanostructure light emitting device stating that the mere use of a structure without affecting the method in a manipulative way is not patentable subject matter.

The use of a nanostructure as a UV light emitting device affects the method in a manipulative way. For example, using a nanostructure as the light emitting device allows precise control over the bandwidth of wavelengths that are used in phototherapy. As described in the present specification, nanoparticles or nanowires may be so selected to emit only UVA light and no UVB light. Furthermore, nanostructure light emitting devices emit photons around a peak wavelength in a narrow bandwidth of wavelengths, thus allowing for a narrow width emission peak having a full width half maximum of about 0.1 to 2 nm as claimed. UV light emitted from a lamp source, however, does not allow of such precise control over the bandwidth of emitted photons. One of skilled in the art would understand from reading the present specification that the nanostructure light emitting device does manipulate the treatment method by emitting light of a desired peak wavelength and desired narrow peak width for psoriasis treatment.

Furthermore, as stated above, Irwin does not teach the inventive method of claim 68. Claim 70 depends from claim 68 and incorporates all its limitation. Therefore, claim 70 is patentable for at least the same reasons mentioned above for claim 68.

All pending claims are patentable and the Examiner is respectfully requested to reconsider and withdraw the pending anticipation and obviousness rejections.

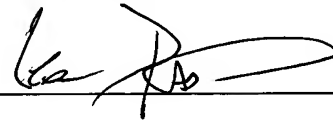
CONCLUSION

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extension fees to Deposit Account No. 19-0741.

Respectfully submitted,

By



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